UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

SEP 1 1 2018

REMOVAL ACTION MEMORANDUM

SUBJECT: Request for a Time-Critical Removal Action for the U.S. Technology Site, Berger, Missouri

FROM: Joe Davis, On Scene Coordinator
Removal and Response North Section

THRU: Dave Williams, Chief
Removal and Response North Section

TO: Mary P. Peterson, Director
Superfund Division

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of funding for a time-critical removal action for the U.S. Technology site, or Site, located at 7627 Zero Road, in Berger, Franklin County, Missouri. The primary objective of this time-critical removal action is to mitigate the potential threat to human health and the environment by the removal of contaminated materials identified at the Site. Contaminants at the Site include lead, cadmium, and chromium at levels above risk-based standards.

II. SITE CONDITIONS AND BACKGROUND

Site Name: U.S. Technology
Site ID: B7G2
CERLIS ID#: MON000706593
MDNR RCRA ID#: MOD122597388
Site Location: Berger, Franklin County, Missouri
Lat/Long: 38.689541° north/91.362880° west
NPL Status: Non-NPL
Removal Category: Time-Critical
Nationally Significant: No

A. Site Description

1. Removal site evaluation

The primary contaminants of concern at the Site are Resource Conservation and Recovery Act, or RCRA regulated metals which are present in waste spent blasting media, or SBM, located at the Site. U.S. Technology Corporation, or UST, shipped approximately 7,000 tons of SBM to the Site (Figure 1). Missouri Green Materials, LLC, or MGM, operated at the Site and accepted the waste. The SBM, contaminated with cadmium, chromium and lead, is currently stored in super sacks and drums within a former manufacturing building at the Site.

UST provided bead blast media to customers to strip paint from aircraft, vehicles and equipment. Such use resulted in toxic levels of metals (e.g., cadmium and chromium) to accumulate in the spent blast media. Beginning in or around 2000, UST shipped SBM to a company called Hydromex for recycling. Instead of recycling the SBM, Hydromex buried SBM at its facility in Yazoo City, Mississippi, resulting in an investigation by the Mississippi Department of Environmental Quality.

In December 2013, the MDEQ notified the Missouri Department of Natural Resources, or MDNR, that numerous shipments of SBM from the Hydromex facility had been shipped to the MGM facility in Berger, Missouri. In addition, the MDNR learned that UST had shipped SBM from some of its other facilities to the MGM facility between at least October 24, 2013 and December 31, 2013. The MDNR personnel inspected the MGM facility on December 13, 2013. The inspection revealed that UST was storing large quantities of SBM in super sack containers and 55-gallon drums inside the MGM facility.

In June 2014, the U.S. Environmental Protection Agency, Criminal Investigation Division, or CID, conducted sampling of the SBM at the MGM facility. Fifty-five samples were collected from various storage sacks and drums within the building. The results of this sampling confirmed that UST was storing hazardous waste at the MGM facility, as 77% of the samples analyzed failed the Toxicity Characteristic Leaching Test, or TCLP, for cadmium and/or chromium.

On April 26, 2018, due to deteriorating conditions of the building and the deteriorating condition of bags containing the waste, the EPA RCRA program referred the Site to the Superfund program to conduct a removal site evaluation to determine if a removal action would be appropriate.

On May 7 and 8, 2018, EPA on-scene coordinators conducted removal assessment activities at the Site. The primary goals of the site visit were to document any actual or threatened release of hazardous materials from the facility, and to ensure that site security was adequate to prevent trespassers from becoming exposed to hazardous materials on Site.

Initial observations from inside the building indicated that several of the bags of SBM had been cut open, spilling some of the contents onto the floor. It was observed that other bags had been knocked over from the locations where they had been stacked. A

number of 55-gallon drums had also been overturned, spilling their contents onto the floor. It was observed that the number of compromised containers was noticeably more then was observed during the 2014 CID investigation. It was also observed that several of the doors and loading bays had been damaged and/or breached by trespassers, to gain access into the building (apparently for the purpose of stealing copper wire and other materials from the building).

Some of the significant observations from the May 2018 assessment included;

- An overturned storage bag and drum with spilled SBM material just inside of a partially opened loading bay door on the northeast side of the building. It was observed that some of the SBM had spilled out of the open loading bay door, and onto the exterior paved area. X-Ray Fluorescence, or XRF, screening of the SBM material on the inside of the loading bay door indicated chromium at over 3,200 milligrams per kilogram, or mg/kg (TCLP results were 18.2 milligrams per liter, or mg/l, for chromium). Exterior XRF screening indicated chromium at over 1,600 mg/kg on the outside of the loading bay door, and approximately 300 mg/kg on the pavement outside of the door.
- Small amounts of visible SBM on the paved ground on the north and east sides of the building (XRF screening indicated approximately 300 mg/kg).
- Areas of spilled SBM inside of the building, where XRF screening indicated chromium in excess of 1,000 mg/kg, and cadmium in excess of 150 mg/kg.
- Water-related damage visible at several locations on the ceiling, and standing water stains on the floor.
- Outside of the building on the west side, XRF screening of sediment on the pavement indicated chromium concentrations of approximately 200 mg/kg.
- On the down gradient southwest area (near treatment lagoon outflow area), several offsite screening areas indicated chromium between 70 and 115 mg/kg. The possible elevated offsite screening levels (relative XRF screening) could indicate offsite migration of contaminated material.
- XRF screening at several background areas upgradient generally indicated background chromium levels around 45 mg per kilogram by XRF.

2. Physical location

The MGM facility was previously a manufacturing facility located on approximately 21 acres of ground located in Section 34, T46N, R04W, west of the town of Berger, Franklin County, Missouri (Figure 1). The physical site address is 7627 Zero Road, Berger, Missouri, 63014. The northern side of the site is bordered by agricultural wooded properties and the Union Pacific Railroad property to the extreme north. The eastern and western sides of the property are bordered by agricultural properties and a few residential homes. The southern side is bordered by Zero Road (paved), Little Berger Creek and its associated riparian wetland. Agricultural property and access to the site is via the gravel driveways off of Zero Road.

The site is located in the Ozark Plateau Physiographic Province. The local topography is relatively flat with a gentle slope to the south towards Little Berger Creek. Ground surface elevation is approximately 515 feet above mean sea level, and the facility is approximately 2,000 feet south of the Missouri River. According to information obtained from the MDNR GeoSTRAT web-based program and private well drilling log information, alluvial soils attain an approximate thickness of 90 feet and the uppermost bedrock consists of the Jefferson City Dolomite.

3. Site characteristics

The Site facility (building) was constructed around 1970 for Zero Manufacturing, a manufacturer of industrial tanks (Figure 2). In 1998, the building was occupied by Gencorp Automotive who processed rubber compounds into automotive sealing products. MGM leased and co-operated within the facility thereafter. The main facility is an 110,000 square feet industrial warehouse, which includes 12,000 square feet of lower-level and mezzanine office space, and five truck loading docks. Other site features include an inoperable two-cell wastewater lagoon; inoperable private water well, well house and water storage tower; attached utility building (i.e., previous compressor storage) and adjacent electrical substation; and a detached open-air outbuilding. The entire floor of the building is constructed with six-inch reinforced concrete, and all loading docks and garage entryways and their immediately surrounding areas are also paved with concrete.

There are no known threatened or endangered species on the Site. However, the U.S. Fish and Wildlife Service, or USFWS, has identified the area as critical habitat for the endangered Indiana bat. The USFWS also lists the threatened Northern long-eared bat, piping plover, and rufa red knot, as well as the endangered gray bat, least tern, pallid sturgeon, pink mucket, snuffbox, and winged mapleleaf, as threatened and endangered species that could be in the area of the Site. The Site area is also identified as a Federal Emergency Management Agency, or FEMA Special Flood Hazard Area, Zone AE (within the 100-year flood plain). This is the first removal action at this Site by the EPA.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

Analytical results from samples collected by the EPA indicate that hazardous substances are present in the SBM waste materials at the Site. Cadmium, chromium, and lead are hazardous substances as defined in Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA section 101(14), 42 U.S.C. § 9601(14), and as designated in 40 C.F.R. § 302.4. TCLP test results confirm that the waste is categorized as hazardous waste since it exceeds the maximum concentration for cadmium and chromium listed in 40 C.F.R. 261.24, Table 1. SBM waste (with cadmium and chromium) has been observed to be released from breached sacks/drums in the interior of the building to the

exterior, through open, damaged loading bay doors. These releases have occurred through acts of vandalism, including damaging loading bay doors, cutting open bags, and overturning drums. The condition of the roof has also deteriorated since 2014 which may lead to water infiltrating the building. Any future acts of trespass, vandalism, or general deterioration will likely result in additional releases, or a threat of release and exposure to the off-site environment (or on-site worker/trespasser).

5. National Priority List status

The Site is currently not listed on the National Priority List. A preliminary hazard ranking system calculation has not been conducted.

6. Maps, pictures and other graphic representations

Figure 1: Site Location Map
Figure 2: Facility Sketch

B. Other Actions to Date

1. Previous actions

During the week of July 9, 2018, EPA personnel conducted additional removal site assessment activities to collect additional generator information from container labeling, and to collect additional inventory information. The building dimensions, label information, and photographs were collected and compiled into a GIS viewer platform. The additional activities indicated the following;

Total Drum Count - 6,760
Total Sack Count - 5,483
Total Container Count - 12,243
Estimated quantity of SBM – 14,000,000 lbs., (7,000 tons)
Based on label information, as many as 90 unique generators may have contributed to the waste totals.

2. Current actions

No further actions have been taken since the removal assessment.

C. State and Local Authorities' Roles

1. State and local actions to date

The MDNR personnel inspected the MGM facility on December 13, 2013. The inspection revealed that UST was storing large quantities of SBM in super sack containers and 55-gallon drums inside the MGM facility. The MDNR referred the Site to the EPA RCRA Program.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Where the EPA determines, based on the factors set forth in 40 C.F.R. § 300.415(b)(2), that there is a threat to public health or welfare or the environment, the lead agency may take any appropriate removal action to abate, prevent, minimize, stabilize, mitigate or eliminate the release or threat of release. The factors in 40 C.F.R. § 300.415(b)(2) that apply to this Site are:

300.415(b)(2)(i) -Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.

Cadmium and chromium are listed CERCLA hazardous substances under 40 C.F.R. § 302, Table 302.4. Large quantities (7,000 tons) of hazardous waste containing cadmium and chromium at the Site poses a significant threat to public health and the environment. The threat comes from potential human exposure to the hazardous substances with the primary exposure pathway being inhalation of airborne dust or ingestion of cadmium and chromium by direct contact by trespassers entering the Site, or future workers using the Site. The chromium was not speciated during analysis, so it is unknown if the chromium at the Site is in the hexavalent or trivalent form. Assuming the chromium is in the hexavalent form, concentrations at the Site (over 3,200 mg/kg inside of the bay door and over 1,600 mg/kg outside of the loading bay) exceed EPA's removal management level for workers exposed to surface soil (cancer risk of 1E-04 = 630 mg/kg). Levels of health concern are not exceeded if the chromium is in the trivalent form. Visual evidence indicates that trespassers have frequently entered the facility building (most likely to steal copper wire, explore, and conduct acts of vandalism). Visual evidence also includes cut open storage sacks, overturned/spilled drums, footprints on top of sacks, stripped electrical conduit on the floor, and various scattered trash.

Additionally, the area is located within a FEMA Special Flood Hazard Area. Future significant flooding could wash loose SBM materials from the building into the surrounding area, and could create airborne dust that would pose an inhalation or ingestion hazard. Exposure to cadmium and/or chromium can cause kidney and lung damage, and has been associated with increased risk of respiratory system cancers [ATSDR 2000]. Further, if a flood occurred, contaminated floodwaters would enter the adjacent Little Berger Creek and its surrounding riparian wetlands. Acute ambient water quality criteria, or AWQC, for freshwater organisms exposed to cadmium is 2.0 µg/L, which is well below the maximum TCLP value of 364 mg/L collected at S-48. The acute AWQC for hexavalent chromium is 16 µg/L and the maximum TCLP chromium sample collected at S-15 was 51.7 mg/L. If the S-15 sample is also primarily comprised of hexavalent chromium, then the sample far exceeds the acute AWQC. In addition, the area is not securely fenced. The property owner has made efforts to secure the storage building to prevent unauthorized entry, but building doors and locks have been breached on numerous occasions since the SBM was brought to the Site. The Site is not manned by full or part time personnel.

300.415(b)(2)(ii) -Actual or potential contamination of drinking water supplies or sensitive ecosystems.

Large quantities of hazardous waste containing cadmium and chromium at the Site pose a

significant threat to drinking water supplies. The TCLP test results confirm that the waste is categorized as hazardous waste since it exceeds the maximum concentration for cadmium and chromium. The TCLP is a soil sample extraction method for chemical analysis employed as an analytical method to simulate leaching of a contaminant from a solid media. Failure of the test indicates that the material is likely to leach out a contaminant at an unacceptable concentration when exposed to rainwater or flood water. The leaching of cadmium or chromium due to exposure to water will increase the likelihood that these contaminants will migrate into Little Berger Creek and Missouri River surface waters/wetlands and soils, and threaten downgradient drinking water supplies. The Region 7 Emergency Response Webmap indicates that there is one inactive private drinking water well located 0.2 miles from the Site. The city of Berger, Missouri has one active drinking water well located approximately 1.6 miles from the Site. The first public drinking water intake on the Missouri River is located approximately 35 miles downstream of the Site, at mile marker 58.

In addition, cadmium and chromium concentrations in soil exceed risk-based soil screening levels as presented in the EPA's Regional Screening Level tables. For example, areas of spilled SBM inside the building had concentrations of cadmium exceeding 150 mg/kg, which exceeds the risk-based protection of groundwater soil screening level of 13.8 mg/kg (Dilution Attenuation Factor = 20). Concentrations of chromium were detected above 1,000 mg/kg inside the building, above 200 mg/kg in sediment on the pavement outside the building, and between 70 and 115 mg/kg at several off-site screening areas near the treatment lagoon outflow area. These concentrations exceed the hexavalent chromium risk-based protection of groundwater soil screening level of 1.34 mg/kg (cancer risk equal to 1E-04 and Dilution Attenuation Factor = 20).

300.415(b)(2)(iii) -Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers that may pose a threat of release.

EPA personnel documented the presence of approximately 7,000 tons of hazardous waste containing cadmium and chromium at the Site. The hazardous wastes are stored in one-ton storage bags (super sacks), and 55-gallon drums (approximately 12,234 containers in total) within the facility storage building. During the May and July 2018 Removal Site Assessments, EPA personnel observed that due to vandalism, and other deteriorating conditions within the main building, the hazardous waste stored in super sacks and drums was being spilled onto the building floor, and was being released outside of the building through overhead doors, and other exit points around the building. Once outside of the building, waste materials exposed to elements such as rain, wind, and flooding events will continue to migrate from the Site into the environment. Any surface runoff from the Site will reach the adjacent Little Berger Creek's riparian wetland habitat and Little Berger Creek itself (on the south side of the Site), which flows approximately 0.6 miles into the Missouri River. The Missouri River and parts of Little Berger Creek are active recreational waterways and used by locals for fishing, and other recreational activities. There are several USFWS T&E species (see Section A.3 above) and sensitive critical bat habitat that may also be impacted by a Site release. Also, other aquatic and terrestrial ecological receptors could be adversely affected by a significant toxic release of heavy metals from Site contaminants. Chromium toxicity to aquatic organisms is dependent on chromium speciation (trivalent is less toxic than hexavalent form), the developmental stage of the organism, and abiotic

factors such as pH and temperature. Cadmium effects on aquatic biota in concentrations greater than 10 µg/L are associated with high mortality, reduced growth, and inhibited reproduction (Eisler, Ronald. 2000. "Handbook of Chemical Risk Assessment" vol. 1, Lewis Publishers, Boca Raton, FL).

300.415(b)(2)(v) – Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or to be released.

As previously stated, the area is located within a FEMA Special Flood Hazard Area, Zone AE. Zone AE are areas that have a 1% probability of flooding every year (also known as the "100-year floodplain"). Properties in Zone AE are at high risk of flooding under the National Flood Insurance Program. Area flash flooding could wash loose waste materials from the building into the surrounding area, or into the adjacent Little Berger Creek. A catastrophic or large-scale flood could cause damage to the storage building and cause rapid and significant transport of the waste into the environment.

300.415(b)(2)(vii) -The availability of other appropriate federal or state response mechanisms to respond to the release.

There are no other known appropriate federal or state response mechanisms available to conduct an appropriate response at the Site. The state of Missouri has referred this matter to the EPA for response.

IV. ENDANGERMENT DETERMINATION

The threatened release of hazardous substances at and from the Site, if not addressed by implementing the removal action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The objective of this removal action will be to collect, characterize, segregate, and transport off-site for proper disposal, all hazardous substances associated with this facility, with the goal of reducing the threat of contaminant migration from the Site. Analytical results of the SBM indicate that TCLP values exceeded the toxicity characteristics for cadmium and chromium at one mg/L and five mg/L, respectively. These exceedances prevent the disposal of the untreated SBM into a Subtitle D landfill; therefore, the SBM must be treated to a concentration at or below the EPA's universal treatment standards, or UTS, prior to disposal.

The removal will include loading and shipping the waste material offsite to a qualified hazardous waste management facility for UTS treatment and disposal. Alternatively, some or all of the material may be treated on site, and then transported offsite for disposal.

Constituent	Toxicity Characteristic as TCLP (mg/L)	Universal Treatment Standard as TCLP (mg/L)
Cadmium	1	0.11
Chromium	5	0.60
Lead	5	0.75

2. Contribution to remedial performance

It is anticipated that the removal action provided for herein will not adversely affect any future remedial performance for the Site.

3. Applicable or Relevant and Appropriate Requirements

Section 300.415(j) of the National Contingency Plan, or NCP provides that removal actions shall, to the extent practicable considering the exigencies of the situation, attain applicable or relevant and appropriate requirements under federal environmental or state environmental facility siting laws.

Federal ARARs

- Subtitle C of RCRA, section 3001, et seq., 42 U.S.C. § 6921, et seq., Hazardous Waste Management and implementing federal and state regulations.
- Subtitle D of RCRA, section 4001, et seq., 42 U.S.C. § 6941, et seq., State or Regional Solid Waste Plans and implementing federal and state regulations.
- 40 C.F.R. Part 261: Identification and Listing of Hazardous Wastes.
  - Subpart A - General
  - Subpart C - Characteristics of Hazardous Waste (§§ 261.20 - 261.24)
  - Subpart D - Lists of Hazardous Wastes (§§ 261.30 - 261.35)
- 40 C.F.R. Part 262: Standards Applicable to Generators of Hazardous Waste.
  - Subpart A - General (§§ 262.1 - 262.18)
  - Subpart B - Manifest Requirements Applicable to Small and Large Quantity Generators (§§ 262.20 - 262.27)
  - Subpart C - Pre-Transport Requirements Applicable to Small and Large Quantity Generators (§§ 262.30 - 262.35)
  - Subpart D - Recordkeeping and Reporting Applicable to Small and Large Quantity Generators (§§ 262.40 - 262.44)
- 40 C.F.R. Part 263: Standards Applicable to Transporters of Hazardous Waste.
  - Subpart A - General (§§ 263.10 - 263.12)
  - Subpart B - Compliance with the Manifest System and Recordkeeping (§§ 263.20 - 263.25)
  - Subpart C - Hazardous Waste Discharges (§§ 263.30 - 263.31)
- 40 C.F.R. Part 268: RCRA Land Disposal Restrictions.

- 49 U.S.C. § 5101 et seq.: Federal Hazardous Materials Transportation Law and/or 49 CFR Parts 107, 171-177.
- 29 C.F.R. Part 1910: Occupational Safety and Health Standards.
- The Off-Site Rule (40 C.F.R. § 300.440) applies to the off-site transfer of any hazardous substance, pollutant, or contaminant. The off-site transfer of any hazardous substance, pollutant or contaminant during this removal action will be conducted in accordance with the Off-Site Rule.
- Water quality criteria established under section 304 or 303 of the Clean Water Act [33 U.S.C. §§ 1314, 1313].

State ARARs

The EPA will address state ARARs during this action. On August 20th, 2018, the agency sent a letter to the state requesting that it identify ARARs for the Site. ARARs proposed by the MDNR will be evaluated by the EPA and will be complied with to the maximum extent practicable.

4. Project Schedule

This time-critical removal action will begin upon approval of this Action Memorandum. It is anticipated that this removal action will be completed within twelve months from the initiation of the removal action.

B. Estimated Costs

Extramural Costs	
Removal Costs	$1,600,000
Extramural Cost Contingency (20 percent)	$320,000
Total Removal Action Project Ceiling	$1,920,000

EPA direct and indirect costs, although cost recoverable, do not count toward the Removal Ceiling for this removal action. Refer to the enforcement section for a breakout of these costs.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

The actions proposed herein for the Site should be initiated immediately. Should these actions be delayed, the potential threats to human health and the environment will continue, and may increase.

VII. OUTSTANDING POLICY ISSUES

None identified

VIII. ENFORCEMENT

See the Confidential Enforcement Addendum for this Site. For NCP consistency purposes, it is not a part of this Action Memorandum. The total EPA costs for this removal action based on

full cost- accounting practices are estimated to be $2,934,032.

Direct Extramural Costs	$1,920,000
Direct Intramural Costs	$ 50,000
EPA Indirect Costs (40.21 percent of all costs)	$ 792,137
Total Project Costs	$2,762,137

Direct costs include direct extramural and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost-accounting methodology effective October 2, 2000. These estimates do not include prejudgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery Rate change from 50.21% to 40.21% for FY2017 and beyond.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Site, developed in accordance with CERCLA, and is not inconsistent with the NCP. This decision is based on the administrative record for the Site.

Conditions at the Site meet the NCP criteria for a removal action, as set forth in 40 C.F.R. § 300.415(b), and I recommend your approval of the proposed removal action. The removal ceiling, if approved, will be $1,920,000. This amount comes from the Regional Removal Advice of Allowance.

Approved:

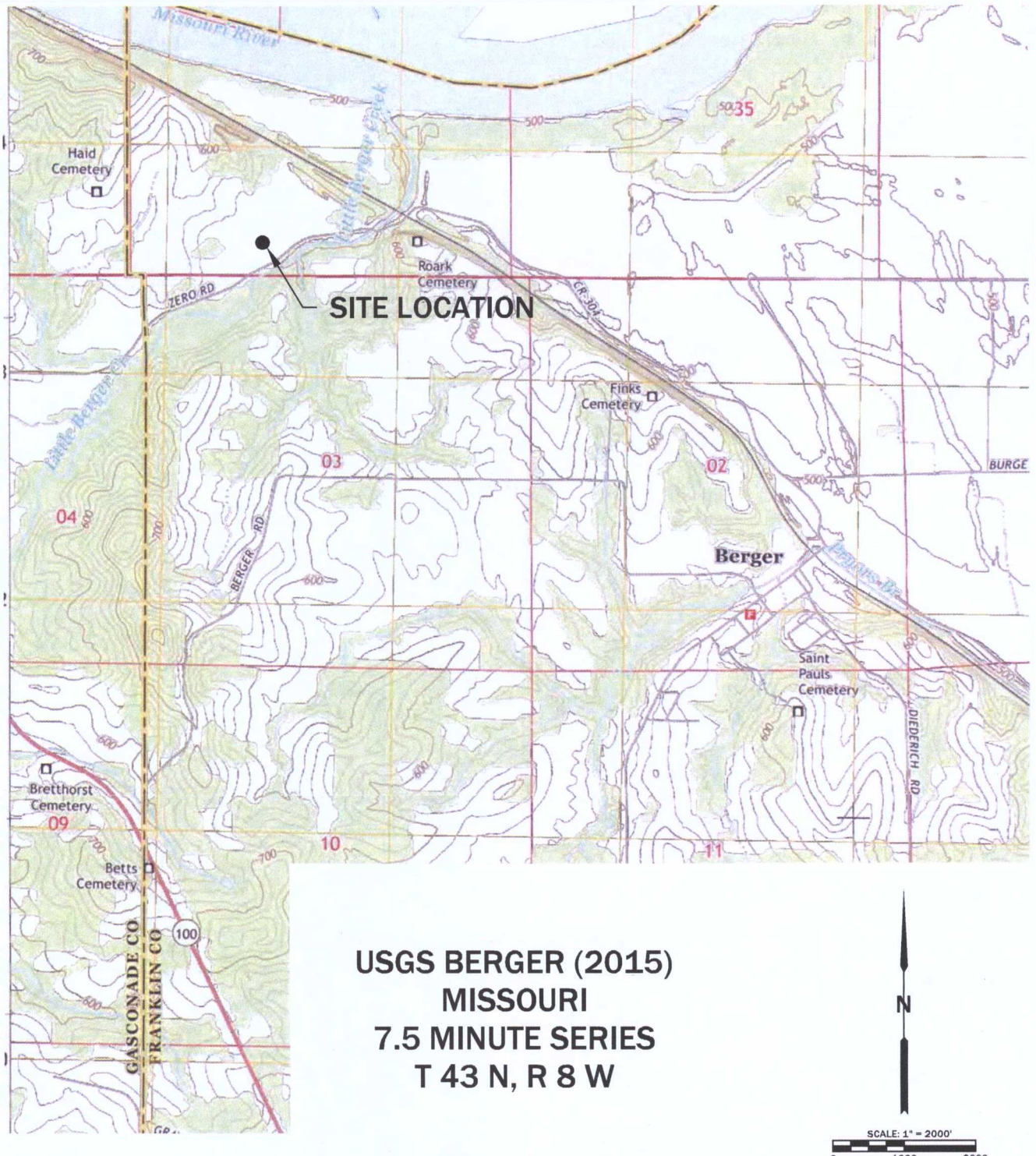
Mary P. Peterson

Mary P. Peterson, Director
Superfund Division Director

9/11/18

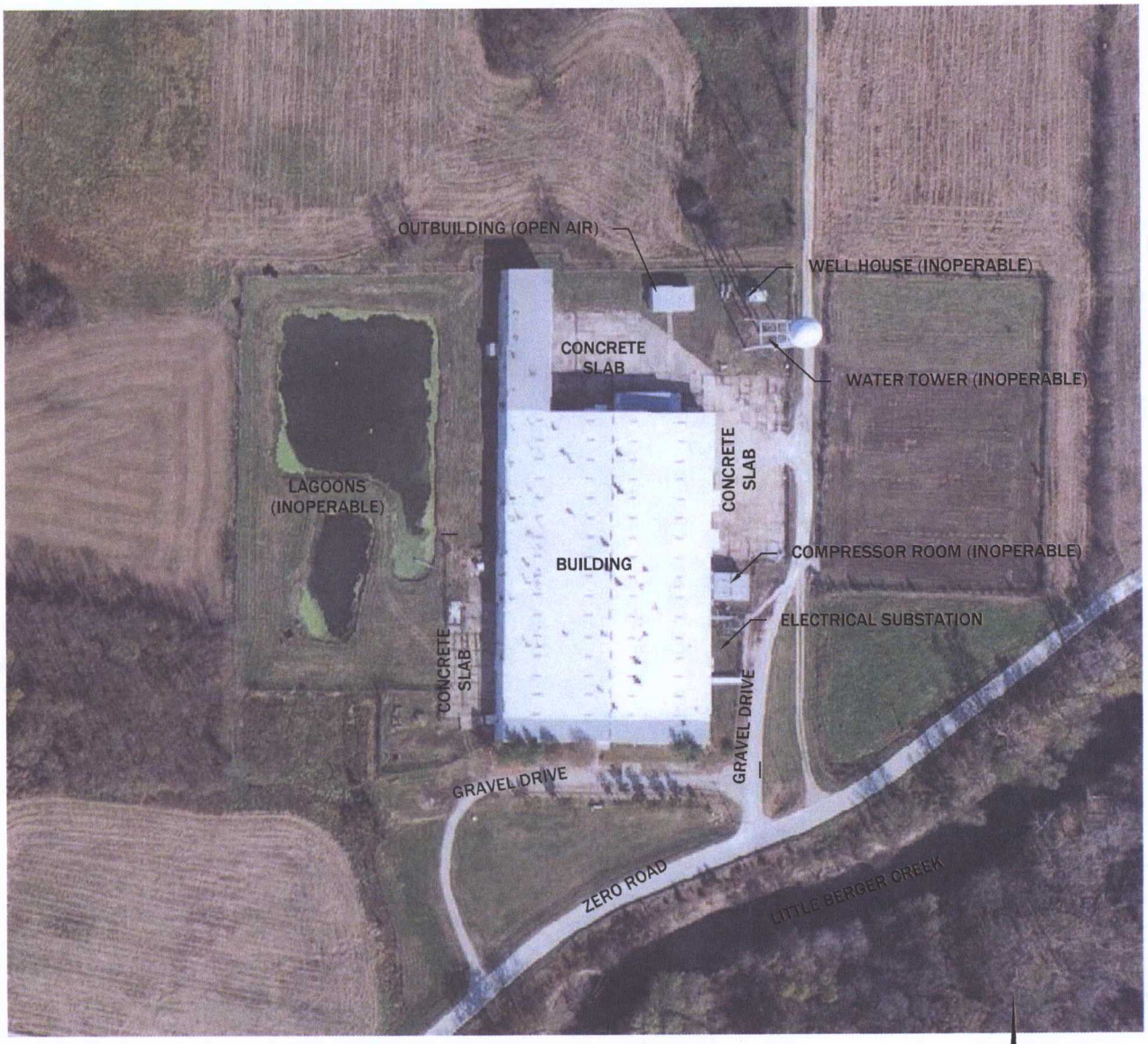
Date

Attachments:
Figure 1 - Site Location Map
Figure 2 - Facility Sketch



USGS BERGER (2015)
MISSOURI
7.5 MINUTE SERIES
T 43 N, R 8 W

U.S. TECHNOLOGY SITE, FRANKLIN COUNTY 7627 ZERO RD, BERGER, MO		
FIGURE 1 - SITE LOCATION MAP	DATE 8/24/2018	Lat/Long: 38.689541 north, 91.362880° west



U.S. TECHNOLOGY SITE, FRANKLIN COUNTY **7627 ZERO RD, BERGER, MO**		
FIGURE 2 - SITE SKETCH	DATE 8/24/2016	Lat/Long: 38.689541 north, 91.362880° west